

Colonial Pipeline Company

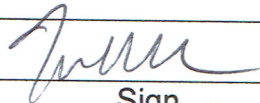
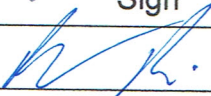


Drain Up Plan

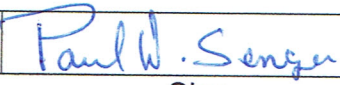
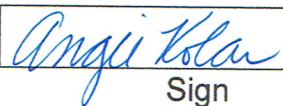
INCIDENT: CR 91

LOCATION: Pelham, AL

DATE & TIME PREPARED: September 13, 2016 11:22 am

Prepared by:		Todd McClellan	9/13/2016
	Sign	Print	Date
Reviewed by:		Robert Perrin	9-13-2016
	Sign	Print	Date

APPROVALS:

Colonial OSC:		Paul Senger	9-13-2016
	Sign	Print	Date
Colonial IC:		Angie Kolar	9-13-16
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**\*Please note:** All approved plans must be filed with the appropriate Documentation Unit Leader (DOCL) to upload into WebIAP as well as disseminated to proper ICS Staff and/or included in the Situation Display.

**CR 91 Event - Drain up Plan**  
**Line 01 near Pelham in Shelby County Alabama**  
**DTN 59268**

**1. Plan Description**

The following plan outlines the drain-up between two (2) stopple fittings, Stopples Fitting # 1 (U/S) and Stopples Fitting # 2 (D/S). The station number of Stopples Fitting #1 is approximately 5140+00 and the station number of Stopples Fitting # 2 is approximately 5175+00.

**2. Work to be Performed Prior to Drain Up**

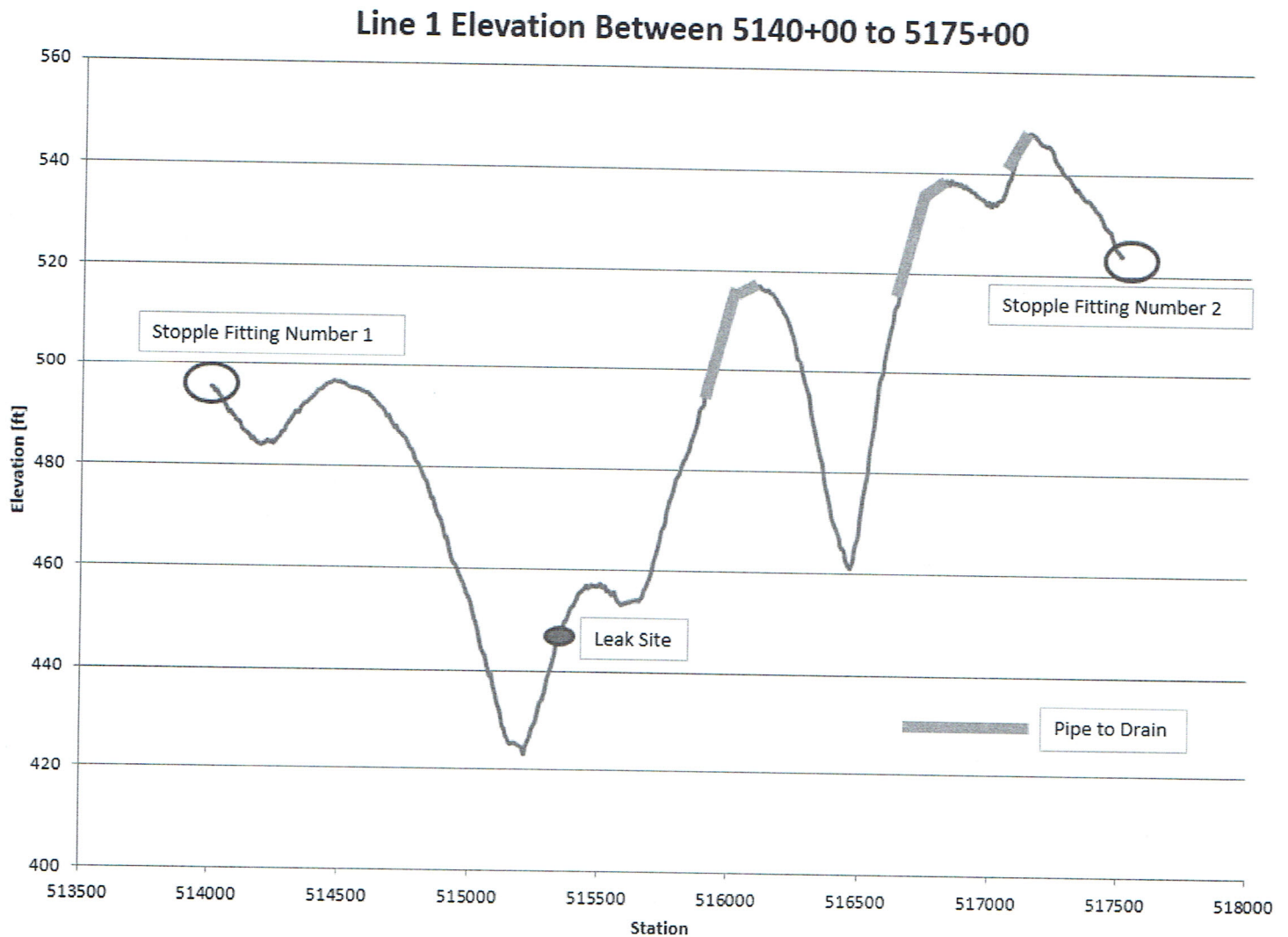
- A. Installation, tapping and plugging of Stopples Fitting # 1 and Stopples Fitting # 2
- B. Install and tap four (4) 2" TORs just downstream of Stopples # 1
- C. Conduct a prejob safety meeting. Identify all the hazards and what steps are being taken to mitigate them. Also inform all personnel of the MSDS sheet for the product they may come in contact with, and complete the Hot Work Safety Sheet, CPC Form 7007.
- D. Equipment and materials to be on site include:

o CTEH Air Monitoring Crew	o Vac Trucks
o Communications	o Bonding cables
o Purple K Powder	o Miscellaneous camloc fittings.
o Light water foam	o Taping machine
o Heavy duty fan (or air horn)	o Manual operated ball valve
o Compressor	o Diapers
o Fire extinguisher	o Product collection tubs

- E. Install a pressure / vacuum gauge on one TOR, one TOR will be for drain-up, and two TORs will be used for stinging activities, venting and visual inspection the pipeline for product.
- F. Install a site glass on the TOR that will be used for drain-up to vac trucks.
- G. All Personnel shall wear the correct PPE while working on this drain-up.



### 3. Drain-Up Elevations and Volumes



VOLUMES TO DRAIN	
TOTAL FEET ACCUMULATED [FT]	464
DIAMETER [IN]	36
WALL THICKNESS [IN]	0.281
AREA OF PIPE [FT <sup>2</sup> ]	6.85
TOTAL VOLUME [FT <sup>3</sup> ]	3178.22
TOTAL VOLUME [BBL]	566.06

Based on elevations, approximately 464 feet (green in graph) of 36", .281" pipe will drain from Stopple Fitting #1 and Stopple Fitting # 2. Based off of elevations during the drain up **570 bbl.** will drain at the TORs.





#### 4. Drain-Up Procedures

1. Verify the following double blockage is complete and verify with the Control Center:
  - Line 01 W. Cahaba Block Valve
  - Line 01 E. Cahaba Block Valve
  - Stopple Fitting #1 – Line 01 Plug
  - Stopple Fitting #2 – Line 01 Plug
  - Pelham Sta. Line 01 MLBV
2. Vacuum trucks will collect the product from the TORs installed downstream of Stopple Fitting # 1. Based on elevations the vacuum trucks will collect **approximately 570 bbls**. Total drain up is expected to take approximately **six (6) hours**.
3. Continuous air monitoring will be performed during all activities by CTEH.
4. Full vacuum trucks will transport product to Staging to be offloaded as outlined in the Mass Balance Plan.

#### 5. Alignment Sheets

Please see attached Alignment Sheet, 5AL051. Low lying areas that will collect product are shown in red. A snap shot of alignment sheet is shown below:

